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The Polyp of the Hydromedusa,
Hybocodon prolifer L. Agassiz¹⁾

With 4 Text-figures

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This medusa is common in the northern parts of Japan from March to July as reported in several papers by Uchida. The species is characteristic of its asexual reproduction and actinula-formation on the manubrium. The development of the ovum into an actinula was briefly reported by Browne (1895) under the name of *Amphicodon fritillaria* and then by Uchida (1927, p. 162-164). The fertilized egg remains attached to the manubrium of the mother-medusa until the actinula is formed. The actinula liberated from the bell cavity fixes itself on the substratum and develops into an adult polyp. Aurich and Werner (1955) describing the development of *Ectopleura dumortieri* reported that the development of *Hybocodon* is somewhat obscure. They seemed to have overlooked Browne's (1895) and Uchida's (1927) papers.

Recently in the spring of 1959, the present writers had opportunity to obtain many medusae bearing on their manubrium eggs and polyps in various stages of development in the vicinity of Akkeshi Marine Biological Station. The development of fertilized eggs to actinulae agrees with the description of Uchida (1927). The fertilized egg is round but the larva has one end, wider and truncated, and applied to the manubrium; this attached end gradually comes to bear more than ten tentacle knobs and its central area becomes flattened while the opposite end still remains round. As the tentacles become longer, the hypostome becomes distinct; the larva is constricted at the middle and divided into two portions, one conical, bearing the tentacles along its base and the other, globular (Fig. 20, a-d, Uchida, 1927). In this stage the polyp has no oral tentacles and corresponds to the proactinula stage of *Ectopleura* reported by Aurich and Werner (1955). According to Browne (1895) the actinula is generally formed in the umbrella cavity. But he stated: "sometimes the young hydra breaks away from the manubrium before the appearance of the second row of tentacles and remain free in the umbrella cavity." So far as the present

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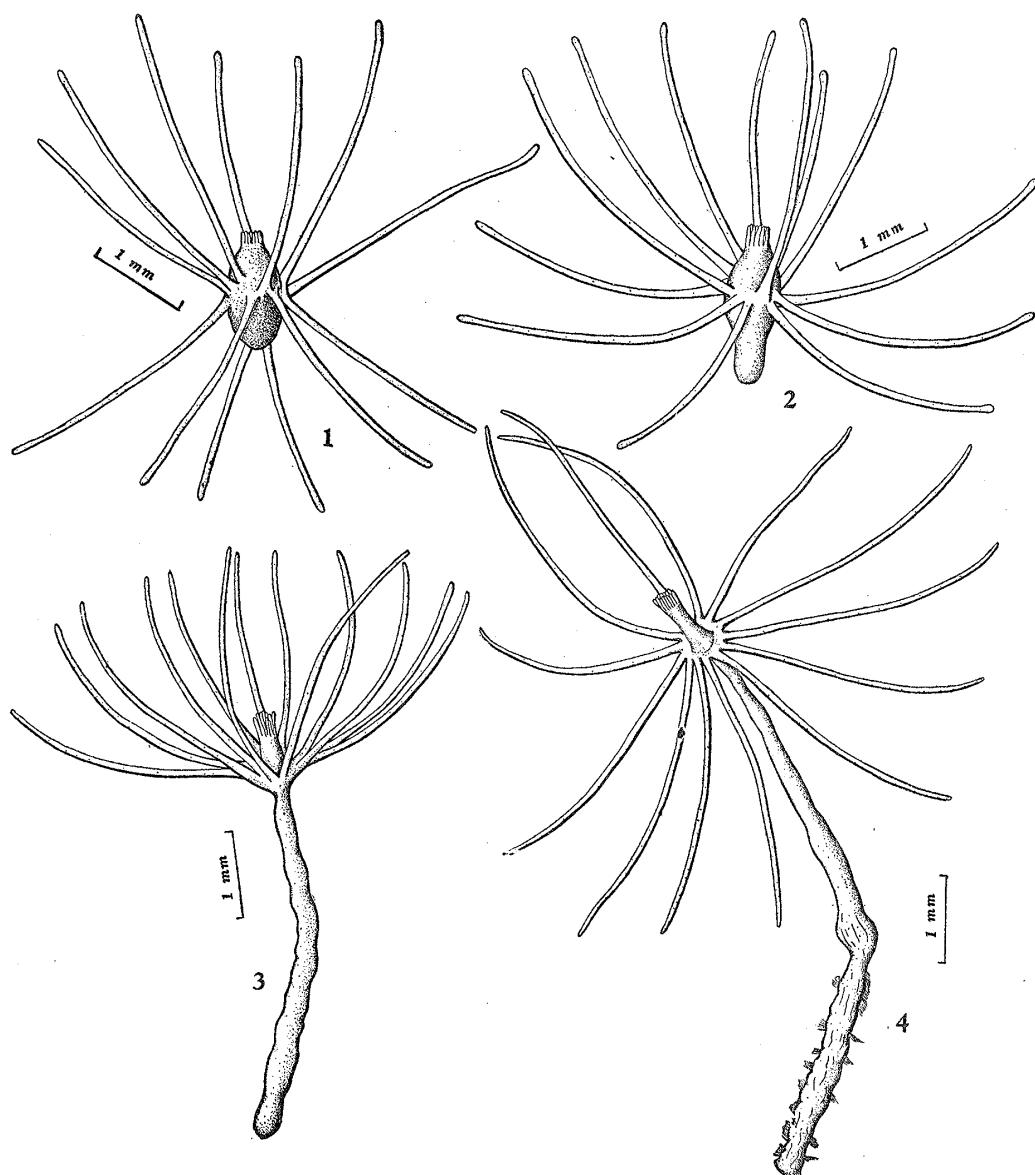


Fig. 1. Actinula. Fig. 2. Actinula in metamorphosis. Fig. 3. Young polyp.
 Fig. 4. Young polyp in which hydranth, hydrocaulus and hydrorhiza are already differentiated.

writers' observations go, the complete actinula was generally found in the bell cavity, but some were observed in plankton at the beginning of May, 1959.

The description of the actinula by Browne agrees in general with Uchida's description and observations made by the present writers on the present specimens. On the further development of actinula, Browne (p. 255) gave a brief note as follows: "A great change took place in the body, which becomes stem-like and the coenosarc showed longitudinal striae of an orange-red colour. The eight oral tentacles increased slightly in length and the whole head became larger." The process noted by Browne is too brief, so it will be described more in detail from specimens now at hand. The actinula just detached from

REFERENCES

Dawes, B. 1936 Parasit., **28**, 330.
Dinnik, J. A. and N. N. Dinnik 1957 Parasit., **47**, 209.
Fukui, T. 1926 J. Fac. Sc. Imp. Univ. Tokyo, IV, **1**, 97.
Singh, K. S. 1958 J. Parasit., **44**, 210.
Tandon, R. S. 1955 Ind. J. Vet. Sc. Anim. Hus., **25**, 225.
_____. 1957a Zeitsch. wissen. Zool., **160**, 39.
_____. 1957b Trans. Amer. Micros. Soc., **76** 353.
Thapar, G. S. and R. S. Tandon 1952 Ind. J. Helm., **4**, 77.

REFERENCES

Aurich, H. and B. Werner 1955 Helgoländer Wiss. Meer., 5 (2), 234.
Browne, E. T. 1895 Trans. Liverpool Biol. Soc., 9, 243.
Uchida, T. 1927 Jour. Fac. Sc. Imp. Univ. Tokyo, Sec. Zool., 1, 145.